

Perceptions of Wildlife Damage on Agriculture; Management Implications

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Abstract

During 2017 we replicated two previous studies to determine how perceptions had changed over the last 30 and 60 years. During 2017, 22 different wildlife species were listed by >1 respondent as causing the most damage in their state. Six of these species were not listed by any respondents in either of the prior surveys, suggesting that problems caused by these species have increased in severity over the last 30 years. Despite this growing list of species causing damage, deer were listed by most respondents as producing the most agricultural damage in their state. State wildlife agencies, state Farm Bureaus, and state Wildlife Extension Specialists were largely in agreement about the level of damage caused by wildlife, but varied as to which species they believed caused the most damage. Most respondents believed that wildlife damage to agriculture had increased during the last 30 years, but 48% of respondents from Farm Bureaus felt it had increased greatly versus only 14% of respondents from state wildlife agencies. State Farm Bureaus and Wildlife Extension Specialists had an excellent understanding of the services and products available from governmental sources to help mitigate wildlife damage on farms and ranches.



Objectives

- To determine perceptions of wildlife-caused damage to agricultural crops
- To identify which crops and wildlife species were involved and determine the seriousness of the problems
- To assess whether differences existed between wildlife professionals and agricultural professionals in their perceptions of wildlife damage
- To aid in solving contemporary wildlife-caused damage problems on a national level, which is hampered due to lack of research
- To examine how perceptions of damage by wildlife have changed during the last 30 and 60 years.

Methods

- A digital questionnaire similar was emailed to the chief executive officer of every state Farm Bureau, the director of each state wildlife agency, and state Wildlife Extension Specialists.
- Respondents rated each wildlife species on the degree of damage it caused in their state using a 0 to 4 scale
- A Friedman 2-way Analysis of Variance Corrected for Ties (Siegel 1956) to determine if respondents from wildlife agencies, Farm Bureaus, and Wildlife Extension Specialists differed significantly in their perceptions.

Results

- In general, wildlife agencies reported that the problems were less severe (grand mean = 0.9) than Farm Bureaus (1.1) and Wildlife Extension Specialists (1.2).
- Most respondents in all groups believed that wildlife-caused damage in their respective states had increased over the last 30 years (Table 1).
- 22 species were listed by respondents, 6 of which had never been listed before!
- Deer were considered the major problem by 50%-70% of all 3 respondent groups (Table 2, Map 1).
- Respondents from all groups reported that feral hogs were their state’s second worse problem (Table 2, Map 2).
- To help reduce wildlife problems, 87% of wildlife agencies reported that they issued special shooting permits to farmers, 77% manipulated hunting seasons and bag limits, and 64% issued special trapping permits to farmers (Table 3).

Table 1: Reported Change in Wildlife Damage

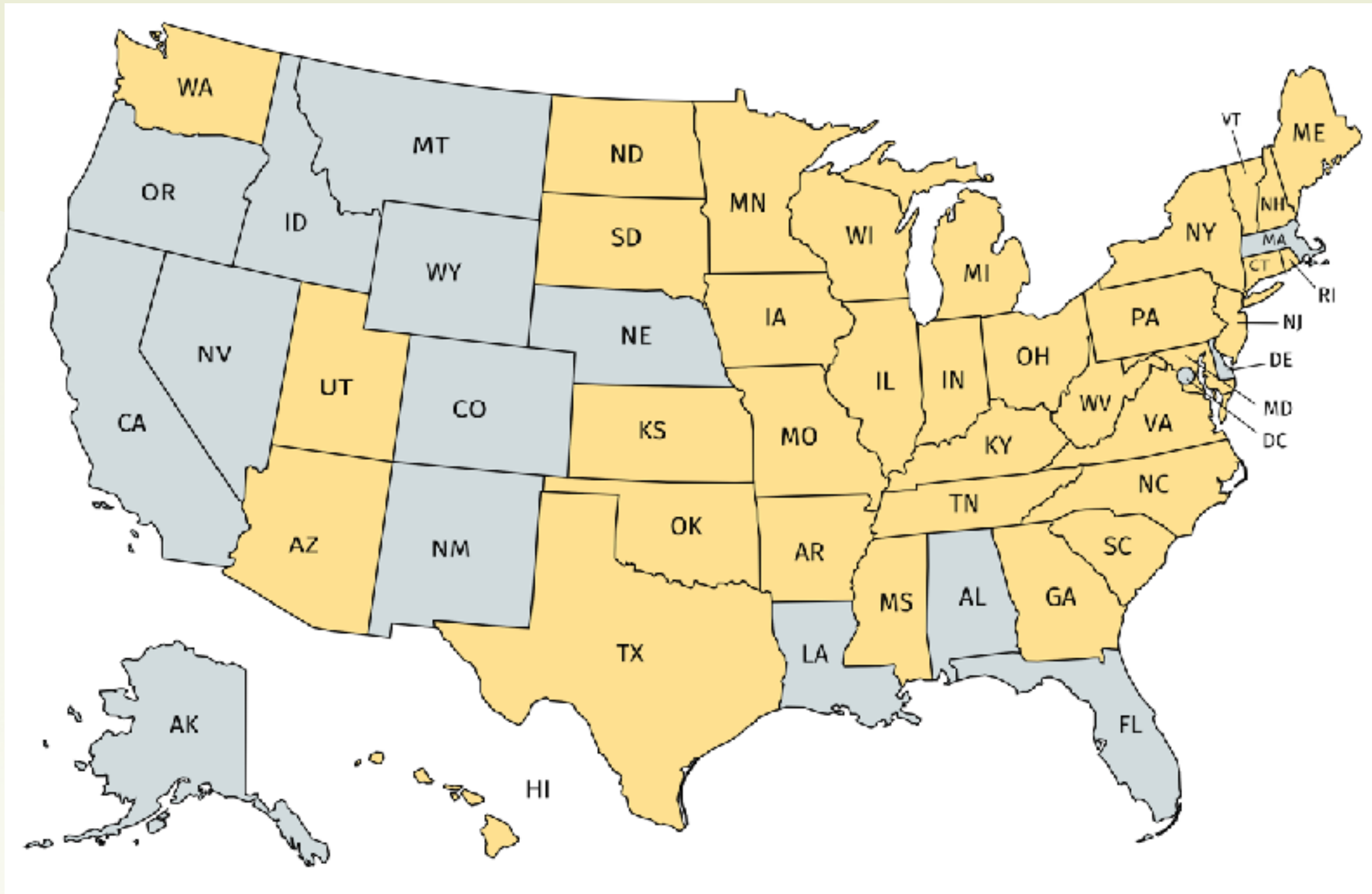
| Level of damage | 2017 Wildlife agencies (n = 39) | 2017 Farm Bureaus (n = 33) | 2017 WES (n = 22) | 1987 Wildlife agencies (n = 39) | 1987 Farm Bureaus (n = 33) | 1987 WES (n = 22) |
|--------------------------|--|-------------------------------------|-------------------------|--|-------------------------------------|-------------------------|
| Greatly decreased = 1 | 0 | 0 | 0 | 4 | 2 | 5 |
| Moderately decreased = 2 | 8 | 3 | 5 | 0 | 2 | 5 |
| Slightly decreased = 3 | 10 | 3 | 5 | 2 | 0 | 5 |
| About the same = 4 | 8 | 9 | 14 | 14 | 5 | 15 |
| Slightly increased = 5 | 18 | 9 | 14 | 14 | 10 | 21 |
| Moderately increased = 6 | 28 | 27 | 50 | 55 | 27 | 38 |
| Greatly increased = 7 | 26 | 48 | 14 | 10 | 54 | 28 |

*Table 2: Species causing the most perceived Damage

| Species | 2017 Wildlife Agencies (n = 43) | 2017 Farm Bureaus (n = 36) | 2017 WES (n = 24) | 1987 Wildlife Agencies (n = 48) | 1987 Farm Bureaus (n = 42) | 1987 WES (n = 44) |
|-----------|--|-------------------------------------|-------------------------|--|-------------------------------------|-------------------------|
| Deer | 64 | 67 | 50 | 80 | 66 | 50 |
| Feral hog | 17 | 25 | 21 | 0 | 0 | 0 |

*the percentages >100% because some individuals listed >1 species

Map 1: States reporting Deer as Top Major Problem



Map 2: States reporting Feral Hog as Top Major Problem

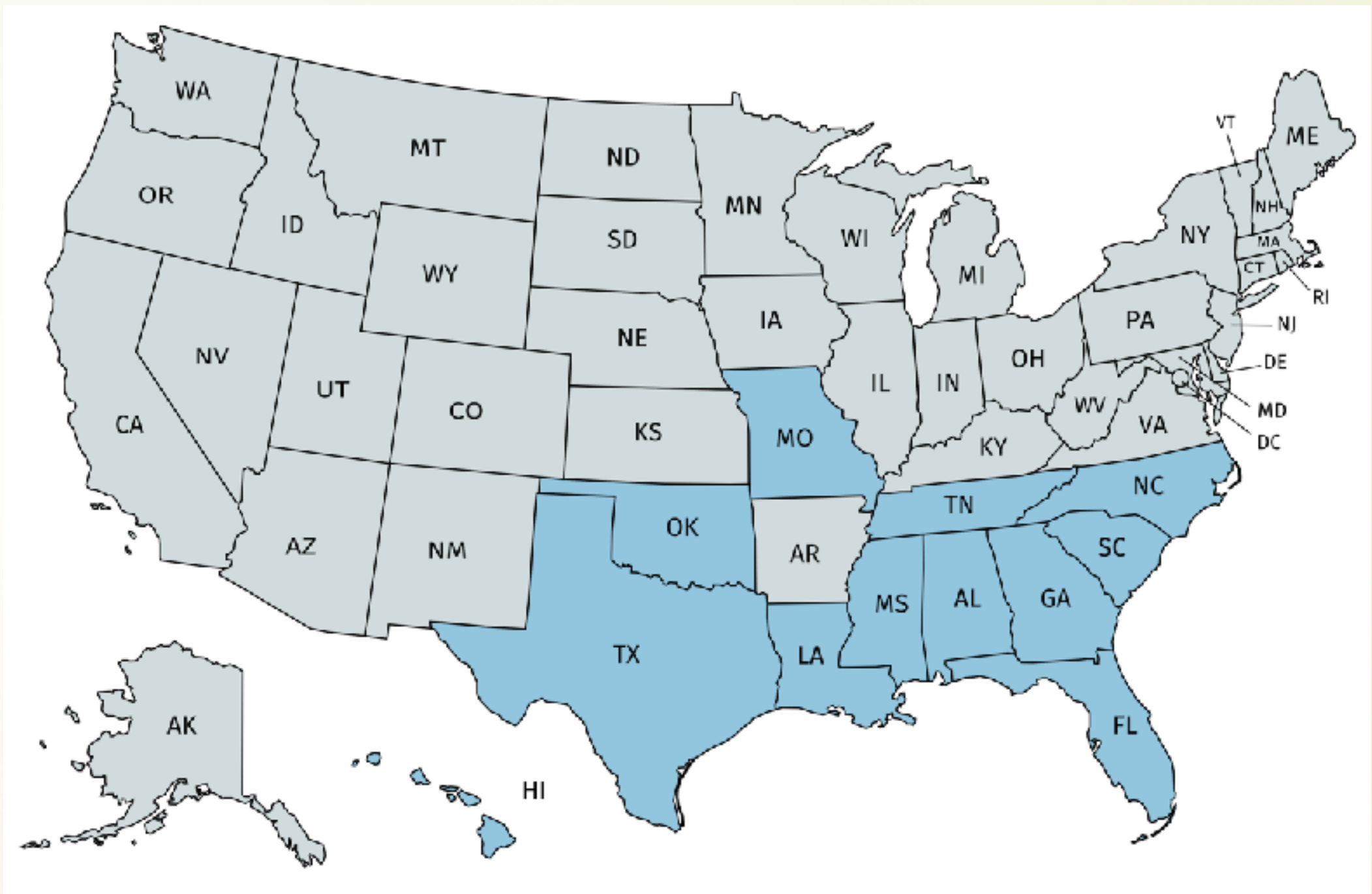


Table 3: Provided Wildlife Damage Mitigation Services

| Services or materials | 2017 Wildlife agencies (n = 34) | 2017 Farm Bureaus (n = 31) | 2017 WES (n = 23) | 1987 Wildlife agencies (n = 49) | 1957 Wildlife agencies (n = 48) |
|--|--|-------------------------------------|-------------------------|--|--|
| Special shooting permits issued to farmers | 89 | 97 | 87 | 86 | 58 |
| Manipulated hunting season and bag limits | 79 | 87 | 85 | 90 | --- |
| Special trapping permits issues to farmers | 66 | 89 | 85 | 59 | 2 |

Discussion

- A broad consensus among the respondents says that wildlife damage has increased in the last 30 years.
- Wildlife agencies believe wildlife-caused damage to crops had become more severe between 1987 and 2017.
- State wildlife agencies tended to rank damage by big game species higher than the other 2 respondent groups. Wildlife Extension Specialists tended to rank damage by smaller species as more severe.
- 22 different wildlife species were listed by respondents as causing the worst problem in their respective states.
- Deer caused the most damage from a national perspective.
- High level of agreement about what mitigation tactics were available indicates strong communication.

Potential Management Implications

The results suggest that communication among groups should be strengthened. Achieving better communication can be to involve local agricultural groups in management decision-making processes. Wildlife conservation programs need to give adequate, effective attention to managing the negative outcomes of healthy wildlife populations as well as producing benefits that society enjoys from these populations. Concern about American society becoming increasingly disconnected with nature, and wildlife specifically, is currently a high-priority topic in the wildlife conservation community.

Acknowledgements

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